

**Case 3620*****Ticinella primula* Luterbacher, 1963 (Foraminifera, Globigerinida, ROTALIPOROIDEA, ROTALIPORIDAE): proposed conservation of the specific name**

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**Abstract.** The purpose of this application, under Article 23.9.3 of the Code, is to conserve the name *Ticinella primula* Luterbacher, 1963, which is in prevailing use for a species of Early Cretaceous (Albian) planktonic foraminifera of the superfamily ROTALIPOROIDEA Sigal, 1958 (nom. correct. ex ROTALIPORACEA). Since the middle 1960s this specific name has been extensively used as a zonal marker of the standard planktonic foraminiferal biochronology, in academic micropalaeontology and economic palaeontology, as well as various disciplines in Cretaceous palaeoenvironmental study. It is threatened by its senior subjective synonym *Hedbergella yezoana* Takayanagi & Iwamoto, 1962. For nomenclatural stability, the junior name *primula* should be conserved by suppressing the senior name *yezoana*.

**Keywords.** Nomenclature; taxonomy; Foraminifera; Globigerinida; ROTALIPOROIDEA; ROTALIPORIDAE; *Ticinella*; *Ticinella primula*; *Hedbergella yezoana*; planktonic foraminifera; Albian; Early Cretaceous.

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1. Takayanagi & Iwamoto (1962, pp. 191, 192) described a fossil subspecies of planktonic foraminifera *Hedbergella trocoidea yezoana* from the Lower Cretaceous (Albian) marine strata in Hokkaido, Japan. As a microfossil taxon first discovered with limited preservation from the surface outcrop and illustrated before the era of scanning electron microscopy (SEM), its fine-scale taxonomic characters were not adequately addressed in the original description and hand-drawing. As can be understood by its placement under the genus *Hedbergella*, the subspecies *yezoana* was considered to be one of the globular-chambered, unornamented hedbergellid taxa that are often difficult to classify because of their morphological simplicity. Nonetheless, this local taxon has received continued if not significant attention, probably because of its many-chambered morphology (7–8 chambers in the final whorl) that is not common in the coeval simple hedbergellids. Since the work of Miles & Orr (1980), this name has been raised to the species rank as *Hedbergella yezoana*.

2. Luterbacher (1963, in Renz et al., pp. 1085, 1086) described the Albian planktonic foraminiferal species *Ticinella primula* from the Le Maley well, Switzerland. It was clearly recognized that the well-preserved holotype, with seven chambers in the final whorl, possesses supplementary apertures and a porticus (one kind of apertural modification), which are relatively small but diagnostic characters at the genus and species levels, respectively. Shortly after its erection, this taxon was chosen as the

middle Albian index species in the then emerging biozonation schemes of Cretaceous planktonic foraminifera in the Mediterranean realm (Moullade, 1966; Sigal, 1977). As new information accumulated, in particular through scientific deep-sea drilling, it had become clear by the 1980s that *T. primula* is a cosmopolitan species occurring across all ocean basins in the low to middle latitudes (for summary, see Caron, 1985, figs. 5, 6). The *T. primula* Interval Zone has since been adopted in all major publications of the standard Cretaceous planktonic foraminiferal biochronology (e.g. Caron, 1985; Bralower et al., 1995; Hardenbol et al., 1998; Ogg & Hinnov, 2012). The name is therefore an important term of common interest not only for academic micropalaeontologists but also for ‘users’ in economic palaeontology (natural resource exploration) and in the broad Cretaceous palaeoenvironmental disciplines such as evolutionary palaeoecology, palaeoceanography, and palaeoclimatology. It is noteworthy that *T. primula* has long tracked an exceptionally stable taxonomic history with no marked emendation.

3. Ando (2012) was the first to pursue the taxonomic identity of *Hd. yezoana* by means of SEM study (uncoated) of the primary types and new type-locality material. Taking account of supportive information from the topotypes/type-locality assemblage, it was concluded that the holotype was synonymous with *T. primula*, possessing uneven wall surface (diagenetically-affected macroperforate, reticulate wall of *Ticinella*) and a porticus-like structure, and presenting other consistent morphological features. Nonetheless, the holotype of *yezoana* was confirmed to be poorly preserved, with its supplementary apertures and wall perforation being obscured.

4. From aforementioned new information, a nomenclatural question emerges as to whether the subjective senior name *Ticinella yezoana* (Takayanagi & Iwamoto, 1962) should be used over *Ticinella primula* Luterbacher, 1963 based on one year of priority. It may be held that the designation of a neotype for *yezoana* based on a well-preserved topotype, if located, would help establish the senior status of *T. yezoana* under Article 75.5 of the Code, yet this is also an unsettling taxonomic approach considering the highly prevailing usage of *T. primula*. It should be emphasized that Ando (2012) confirmed, after processing large quantities of unweathered type-locality samples, that preservational limitation would not allow for collection of much better preserved topotypes for *T. yezoana*. Unarguably, conservation of the junior name *T. primula* is most desirable, and the current priority problem should be best addressed under Article 23.9.3 (Reversal of Precedence), in which provisions are made to moderate the Principle of Priority.

5. The junior synonym *T. primula* easily meets the conditions of Article 23.9.1.2. Ando (2012, p. 282) provided a list of total 20 citations by 15 authors/author groups who properly identified and illustrated *T. primula* and used this name as valid in the last 50 years. The following are additional such works that more recently came to my attention: Magniez-Jannin (1975, p. 262–265, pl. 20, figs. 1–15, pl. 21, figs. 1–4 [Aube, France]); Price (1976, pp. 637, 640, pl. 2, figs. 5–7 [Bemerode, NW Germany]); Robaszynski et al. (1980, pl. 12, figs. 5, 6 [Boulonnais, France]); Blau et al. (1992, p. 199, figs. 5.3, 6.8 [Neiva subbasin, Colombia]); and Nishi et al. (2003, fig. 10.1 [Hokkaido, Japan]). By including Ando (2012, p. 282, figs. 4.1–4.3 [Hokkaido, Japan], 7.2, 7.3 [IODP Site U1349, Shatsky Rise, NW Pacific], 7.4, 7.5 [DSDP Site 392 off Florida]), a total of 26 publications by 20 authors can be listed as the

taxonomic/biostratigraphic works that properly identified and illustrated *T. primula*, and they constitute the uninterrupted citation record from the middle 1960s until today. Several other taxonomic works included illustrations of specimens identified as *T. primula* that are difficult to evaluate because of poor preservation, inappropriate illustration, or misidentification. Furthermore, works that simply cited the taxon name *primula*, both by specialists and non-specialists, have been extensively disseminated over the Cretaceous academic/industrial fields. Their large number makes it impractical to count them.

6. In the case of the senior name, *T. yezoana* does not strictly comply with the conditions of Article 23.9.1.1. To the best of my knowledge, specimens identified as *T. yezoana*, apart from the original description, were so far illustrated five times after 1899 by four authors/author groups (G.A. Miles; D.W. Haig; M.D. Georgescu; B.T. Huber) (see Ando, 2012, p. 281). Oddly, as pointed out by Ando (2012), those figured specimens were all fewer chambered forms ( $5\frac{1}{2}$ – $6\frac{1}{2}$  in the final whorl) that do not possess the key many-chambered character of *T. yezoana* (= *T. primula*), so as to contrast strongly with the original *yezoana* description. Works that simply mention the taxon name *yezoana* do exist, but they are limited to specialized taxonomic studies. Nonetheless, the name *yezoana* has actually been mentioned, and so it cannot be considered a truly forgotten name (nomen oblitum as per Article 23.9.2). Therefore, it is necessary to request a ruling under the plenary power, as specified in Recommendation 23A and Article 23.9.3.

7. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to suppress the specific name *yezoana* Takayanagi & Iwamoto, 1962, as published in the trinomen *Hedbergella trocoidea yezoana*, for the purposes of the Principle of Priority, but not for those of the Principle of Homonymy;
- (2) to place on the Official List of Specific Names in Zoology the specific name *primula* Luterbacher, 1963, as published in the binomen *Ticinella primula*;
- (3) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the specific name *yezoana* Takayanagi & Iwamoto, 1962, as published in the trinomen *Hedbergella trocoidea yezoana* and as suppressed in (1) above.

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